201-15239

Anh Nguyen
05/05/04 12:27 PM

To: NCIC HPV@EPA
cc:
Subject: Fw: Environmental Defense comments on the Aromatic Extracts Category

----- Forwarded by Anh Nguyen/DC/USEPA/US on 05/05/2004 12:27 PM -----

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05/05/2004 11:57 AM

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Subject: *Environmental Defense comments on the Aromatic Extracts Category*

(Submitted via Internet 5/5/04 to oppt.ncic@epa.gov, hpv.chemrtk@epa.gov, boswell.karen@epa.gov, chem.rtk@epa.gov, MTC@mchsi.com, and Grayt@api.org)

Environmental Defense appreciates this opportunity to submit comments on the robust summary/test plan for the Aromatic Extracts Category.

The Petroleum HPV Testing Group of the American Petroleum Institute, in response to EPA's High Production Volume (HPV) Chemical Challenge, has submitted robust summaries and a test plan describing available data for the aromatic extracts category (AEC). This complex chemical category is a byproduct of petroleum refining and consists of relatively large organic molecules containing from 15 to 54 carbon atoms. This category of chemicals is subdivided into two major subgroups, distillate aromatic extracts (DAE) and residual aromatic extracts (RAE). These subgroups of chemicals share many properties, but are differentiated by the fact that DAE contain a higher percentage of lower molecular weight congeners. The specific make up of each of these groups of chemical varies further with the source of the petroleum being refined; thus, it is impossible to precisely characterize either this category of chemicals or its subgroups. Therefore, given the complexity of the category, we appreciate that it is not possible to provide precise data for the chemical/physical properties and the environmental fate of individual chemicals that address all constituents of this category.

This category of chemicals is particularly data-rich for such a complex mixture. Background information describing the production and uses of AEC and data addressing each of the SIDS elements required under the HPV Challenge are described in some detail in the well-written test plan. Specific studies are described in some detail in the thorough and well-organized robust summaries. The matrix of SIDS elements versus available data presented in Table 3 of the test plan indicates that each of the required elements have been addressed for DAE, and all but biodegradation and acute mammalian toxicity have been addressed for RAE. In the latter cases, it is proposed that these elements be addressed by data bridged from DAE. Given that RAE should be less toxic than DAE, we consider bridging data from DAE appropriate.

The chemical/physical properties have been estimated to the extent possible for such complex mixtures. AEC have been demonstrated to have low environmental toxicity. This observation is probably attributable to the very low water solubility of chemicals in this category. The environmental fate and hazards posed by many of the individual components of these mixtures have been determined, and the fate and hazards of the mixtures themselves have been estimated to the extent possible. The mixtures would be expected to persist in the environment, but as relatively inert tars.

The two AEC subgroups differ significantly in their mammalian toxicity, with DAE being more toxic than RAE in repeated dose studies. It is not stated, but this observation is probably due to the fact that the larger molecules present in RAE are less readily absorbed into the body. DAE are also likely to be the more carcinogenic, as this fraction contains a greater percentage of polycyclic aromatic hydrocarbons (PAH); but PAHs are

found in RAE as well, and both fractions are considered carcinogenic. Both fractions are also mutagenic.

In summary, we find this submission about as complete as could be expected for such a complex mixture of chemicals, and find the considerable data describing the fate and toxicity of this complex mixture of chemicals to be well-organized and described.

Thank you for this opportunity to comment.

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